

Please add the following abstract:

***Abstract***

Method and assembly for sustained elimination or reduction of polarization induced signal fading in optical interferometer networks comprising at least two optical paths from an input port to an output port, the transmission delays of the paths differing by  $\tau$ , an interrogation arrangement interrogating the optical phase differences between the paths, containing at least one optical source launching optical power into a port, a detector arrangement converting the optical power from an output port into electrical detector signals, and a control and signal processing unit capable of processing detector signals to determine the phase difference. The method comprising the steps of: altering the input polarization state produced by the source with a modulation frequency that is comparable to or higher than  $1/(4\tau)$  receiving the optical signals at the detector arrangement providing a detector signal; processing the detector signal determining the phase difference between the optical signals.